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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,374	12/12/2001	Kwang Seok Oh	W2K1070	2810

23504 7590 03/19/2004

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EXAMINER	
WILLIAMS, ALEXANDER O	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,374	OH ET AL.	
	Examiner	Art Unit	
	Alexander O Williams	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,12,16,21,22 and 39-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12,16,21,22 and 39-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Serial Number: 10/015374 Attorney's Docket #: BK-0005
Filing Date: 12/12/01; claimed foreign priority to 3/9/2001

Applicant: Oh et al.

Applicant's Amendment filed 12/15/03 has been acknowledged.

This application contains claims 43 to 46 drawn to an invention non-elected with traverse in Paper No. 6.

Claims 10, 11, 13-15, 17-20, 23-38 have been canceled.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **insulator coupled to and covering the entire first surface of the second semiconductor chip** and having opposed first and second surfaces; and an insulator coupled to and covering the entire first surface of the second semiconductor chip, **wherein the insulator is coupled between the adhesive layer and the first surface of the second semiconductor chip** in claim 1, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims 1 to 9, 12, 16, 21, 22 and 39 to 49 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 21 and 39, it is unclear and confusing to what is meant by "**an insulator coupled to and covering the entire first surface of the second semiconductor chip** and having opposed first and second surfaces; and an insulator coupled to and covering the entire first surface of the second semiconductor chip, **wherein the insulator is coupled between the adhesive layer and the first surface of the second semiconductor chip**." Where is this shown in the drawings? The insulator **3** in the drawings appear to only show the adhesive layer **4** covering the entire first surface of the second semiconductor chip.

Any of claims 1 to 9, 12, 16, 21, 22 and 39 to 49 not specifically addressed above are rejected as being dependent on one or more of the claims which have been specifically objected to above.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 50 to 52 are rejected under 35 U.S.C. § 102(e) as being anticipated by Pai et al. (U.S. Patent # 6,503,776 B2).

For example, in claim 50 and similar claims 51, Pai et al. (figures 1 to 10) specifically figure 8 show a semiconductor package comprising: a first semiconductor chip **110** having opposed first and second surfaces, the second surface including a plurality of pads; a plurality of conductive wires **150**, wherein each of the conductive wires is electrically coupled to a respective one of the pads of the first semiconductor chip; a second semiconductor chip **130** stacked over the second surface of the first semiconductor chip, the second semiconductor chip including a first surface, and an opposite second surface that includes a plurality of pads; an adhesive layer **166** coupled between the insulator and the first surface of the second semiconductor chip; and a sealing material **(inherit)** covering the first and second semiconductor chips, wherein a portion of the sealing material is between the pads of the second surface of the first semiconductor chip and the insulator.

Initially, it is noted that the 35 U.S.C. § 103 rejection based on an insulator and an adhesive layer deals with an issue (i.e., the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece) that has been previously decided by the courts.

In Howard v. Detroit Stove Works 150 U.S. 164 (1893), the Court held, "it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together...."

In In re Larson 144 USPQ 347 (CCPA 1965), the term "integral" did not define over a multi-piece structure secured as a single unit. More importantly, the court went further and stated, "we are inclined to agree with the solicitor that the use of a one-piece construction instead of the [multi-piece] structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice" (bracketed material added). The court cited In re Fridolph for support.

In re Fridolph 135 USPQ 319 (CCPA 1962) deals with submitted affidavits relating to this issue. The underlying issue in In re Fridolph was related to the end result of making a multi-piece structure into a one-piece structure. Generally, favorable patentable weight was accorded if the one-piece structure yielded results not expected from the modification of the two-piece structure into a single piece structure.

Claims 1 to 3, 5, 7 to 9, 12, 21, 22 and 39 to 49, **insofar as they can be understood**, are rejected under 35 U.S.C. § 103(a) as being unpatentable over by Pai et al. (U.S. Patent # 6,503,776 B2).

For example, in claim 1 and similar claims 21 and 39, Pai et al. (figures 1 to 10) specifically figure 8 show a semiconductor package comprising: a first semiconductor chip **110** having opposed first and second surfaces; an adhesive layer **166** coupled to the second surface of the first semiconductor chip; a second semiconductor chip **130 or 160** stacked over the second surface of the first semiconductor chip and having opposed first and second surfaces; and an insulator **166** coupled to and covering the entire first surface of the second semiconductor chip, wherein the insulator is coupled between the adhesive layer and the first surface of the second semiconductor chip.

Initially, and with respect to claims 8, 9, 12 and 43 to 46, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113.

Therefore, it would have been obvious to one of ordinary skill in the art to use the adhesive and the insulator as "merely a matter of obvious engineering choice" as set forth in the above case law.

Response

Applicant's arguments filed 12/15/03 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The insertion of Applicant's additional claimed language, for example, "claims 1, 21, 39 and new claims 50 to 52" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL

EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Field of Search	Date
U.S. Class and subclass: 257/685,686,723,777,784,786	1/13/03 8/6/03 3/11/04
Other Documentation: foreign patents and literature in 257/685,686,723,777,784,786	1/13/03 8/6/03 3/11/04
Electronic data base(s): U.S. Patents	1/13/03 8/6/03 3/11/04

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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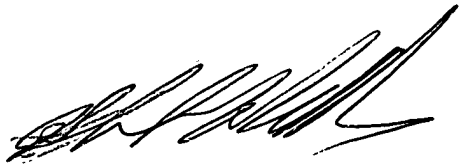

Alexander Williams
Primary Examiner